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ABSTRACT

This 27-item bibliography represents the variety of articles added to the ERIC database from 1983 through 1988 on left-brain/right-brain research, theory, and application as it relates to classroom incorporation. Included are conflicting opinions as to the usefulness of left-brain/right-brain studies and their application in the learning environment. However, most of the articles in the database describe learning activities which incorporate the research and support applications in the classroom. Many of the articles propose ways for people to become more whole-brained. (RAE)

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Left Brain/Right Brain: Research and Learning

by Ruth Eppele

The American school system has often been described as a left-brain centered system, that is pertaining to the more scientific or logic based hemisphere of the brain. Research on brain orientation shows that a good portion of the population is right-brain dominant and learn, or struggle to learn, to conform to this left-brain orientation. Many articles and papers dealing with left-brain/right-brain theory and its affect on language learning have been appearing at conferences and in various trade journals over the past decade. There is some controversy over this issue as it challenges the structure and history of the American education system and many of the applications proposed would change the focus of the classroom from the group as a whole to the individual student and his/her individual brain orientation or learning style.

This bibliography represents the scope of most of the articles added to the ERIC database from 1983 through 1988 on left-brain/right-brain research, theory and application as it relates to classroom incorporation. This bibliography does include conflicting opinions as to the usefulness of left-brain/right-brain studies and their application in the learning environment. However, the majority of the articles in the database describe learning activities which incorporate the research and support application in the classroom.

The abstracts for most of these entries have been edited to allow for the inclusion of more citations. The ED numbers have been included so that the user who wants an introduction to left-brain/right-brain research or applications can go directly to microfiche collections, order from the ERIC Document Reproduction Service (EDRS), or go to *Resources in Education* for information on obtaining those sources not available through EDRS. The citations to journals are from the *Current Index to Journals in Education* and can be acquired most economically from library collections or interlibrary loan. Alternatively, reprint services are available from University Microfilms International (UMI) and Original Article Tearsheet Service (OATS) of the Institute for Scientific Information.

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An Overview

Segal, Bertha E. "Teaching English through Action: Total Physical Response (T.P.R.). A Right-Brain/Left-Brain Approach to Language Acquisition. A Workshop." Paper presented at the 21st Annual Meeting of the International Association of Teachers of English as a Foreign Language, 1987. 10 p. Adapted from a chapter in the author's "Teaching English through Action" (1981); see ED 224 291. [ED 285 428]

Presents materials from a teacher workshop on the Total Physical Response method for teaching English as a second language. Describes the process of first language acquisition; uses physical ac-

CS009505

tivities in the classroom to reinforce learning; gives basic procedures for a listening lesson, a vocabulary unit, an initial lesson in basic commands, a lesson in body parts, a lesson in classroom objects, and a review lesson; and provides a chart to record student progress.

Stacks, Don W.; Andersen, Peter A. "Toward a Holistic Neurophysiological Understanding of Intrapersonal Communication." Paper presented at the 73rd Annual Meeting of the Speech Communication Association, 1987. 33 p. [ED 289 181]

Reviews how the brain operates at the most basic level of interest to human communication theorists, intrapersonal communication. Includes a table of brain functions and structures and a diagram of the triune brain.

Theory and Recent Literature

Haring, Ed. *Teaching and Learning Styles.* Illinois, 1985. 17 p. [ED 258 658]

Reviews recent literature on learning styles and teaching styles, and the relationship between the two. Presents a brief overview of brain research with respect to learning styles, followed by a series of suggestions for teachers to help them recognize different aspects of learners and make the instructional changes which allow students a better opportunity to learn and to be more responsible for their own learning.

Herrmann, Ned. "The Creative Brain," *NASSP-Bulletin,* v66 n455 p31-46 Sept 1982.

Outlines the differences between left-brain and right-brain functioning and between left-brain and right-brain dominant individuals, and concludes that creativity uses both halves of the brain. Discusses how both students and curriculum can become more "whole-brained."

Hines, Terence. "Left Brain, Right Brain: Who's on First?" *Training and Development Journal,* v39 n11 p32-34 Nov 1985.

States that none of the left-brain/right-brain "mythology" is supported by the actual research on the differences between the left and right human cerebral hemispheres.

Lord, Thomas R. "A Plea for Right Brain Usage," *Journal of College Science Teaching,* v14 n2 p100-2 Nov 1984.

Offers reasons why educators should emphasize right-brain understanding in educational curricula at all levels.

Recent Research

Reifschneider, Thomas J., ed.; and others. "The Human Brain: Cognition in Education." Report of the First Annual Conference, September 24-25, 1982. 94 p. [ED 234 035]

The papers in this monograph were presented at the first annual conference on theories and research related to learning styles, hemisphericity, and other cognitive-related issues in education. Includes Jack Kreitzer's "Poems Take Two Brains (or: Poetry Ain't for Halfwits)".

Millard, David E.; Nagle, Stephen J. "Minds, Brains, and the Language Arts: A Cautionary Note." Paper presented at the 37th Annual Meeting of the Conference on College Composition and Communication, 1986. 18 p. [ED 283 221]

Provides reasons for writing teachers to wait to use mind-brain research to revise pedagogical literature.

Coulson, Louis T.; Strickland, Alison G. "Your Brain Tells Plenty about Your Management Skills," *Executive Educator,* v5 n7 p22-23, 27 Jul 1983.

Comparison of the thinking styles of 21 corporate chief executive officers (CEO's) and 23 school superintendents from across the United States reveals CEO's as right-brain oriented (innovative, intuitive), and superintendents as left-brain oriented (logical, rational). Suggests both groups strive for "whole-brained thinking," balancing both orientations.

Mounts, Deborah S.; Street, Steven C. *Whole Brain Learning Summer School Project.* Migrant Child Education-Region II, California, 1983. 46 p. [ED 237 289]

Describes a summer school project for 200 migrant children (K-8) to determine whether significant change in teacher and student behaviors would result from combining right-brain and left-brain learning activities for 34 school days.

Robbins, Steven B. "Left-Right Brain Research and Its Premature Generalization to the Counseling Setting," *Journal of Counseling & Development,* v64 n4 p235-39 Dec 1985.

Brain lateralization research has led to speculation about counseling and guidance implications of left-right brain differences. Serious limitations in these implications are highlighted.

Keenan, Donna; Smith, Michael. "Sex Discrimination and Cerebral Bias: Implications for the Reading Curriculum," *Reading Improvement*, v20 n1 p50-53 Spr 1983.

Reviews research supporting the concept that girls usually outperform boys on tasks requiring verbal skills and that boys outperform girls on tasks using visual and spatial skills. Offers an explanation for this situation based on left-brain/right-brain research. Concludes that the curriculum in American schools is clearly left-brain biased.

Hauck, LaVerne S., Jr. "Differences in Information Mapping Strategies in Left and Right Brain Learners." Paper presented at the Annual Meeting of the American Vocational Association, 1985. 9 p.

[ED 270 474]

Describes research on the Information Mapping technique which was used to present a learning packet; its usefulness in helping right-brain cerebrally dominant students to achieve the same level of subject mastery as their left-brain counterparts was examined.

Bohning, Gerry; Read, Donna. "Selected Symposium Summaries, 21st Annual Conference of the Florida Reading Association, 1983." *Florida Educational Research and Development Council Bulletin*, v17 n4 Spr 1984. 56 p. [ED 253 864]

Eight papers summarized in this collection were drawn from a 1983 conference symposium designed to expand and disseminate increased understanding about reading and its instruction. One paper focuses on what research says to the reading teacher about left brain/right brain modality preference.

Dombrower, Jule; and others. "The Criterion-Related Validity of Two Tests Hypothesized to Represent Left Brain and Right Brain Function for a Group of Elementary School Children," *Educational and Psychological Measurement*, v42 n3 p927-33 Fall 1982.

Investigates the concurrent and postdictive validity of two newly-devised tests of contrasting hemispheric function (Test of Right Hemisphere Ability, Test of Left Hemisphere Ability) relative to scores earned on the reading and mathematics portions of the Comprehensive Tests of Basic Skills.

Program and Curriculum Application

Thomas, Yvonne A.; Thomas, Stephen B. "Cerebral Lateralization and Its Effect on Drawing," *Education*, v104 n1 p47-50 Fall 1983.

Discusses the importance of both sides of the brain for the development of drawing skills but notes that the left brain can inhibit the action of the right brain. Provides a discussion of cerebral lateralization and child development. Suggests five drawing exercises to help develop hemispheric cooperation.

Badian, Nathlie A. "Nonverbal Disorders of Learning: The Reverse of Dyslexia?" *Annals of Dyslexia*, v36 p253-69 1986.

Teacher perceptions of the social-behavioral characteristics of 99 boys (aged 7-14) identified by their nonverbal learning abilities found that low nonverbal subjects showed good left-brain functioning, good reading, poor right-brain functioning, poor arithmetic skills, low motivation, poor work habits, disorganization, and poor relationship with peers.

Stein, Harry. "Visualized Notemaking: Left-Right Brain Theory Applied in the Classroom," *Social Studies*, v78 n4 p163-68 Jul-Aug 1987.

Encourages visual notetaking to help students improve learning. Emphasizes that when students use verbal and visual cues, the entire brain is called to action. Specific examples of notetaking such as "T-line," "Stickperson," and "Star models" are illustrated.

Blake, William E. "Science and Creative Writing: An Ad(d)verse Relationship?" *Science Teacher*, v50 n9 p30-33 Dec 1983.

Suggests integrating creative writing activities into field trips or outdoor education experiences in science as a method of providing "right-brain" and "left-brain" activities in the same exercise. Provides instructions given to students and a poem written from student "photographs" using imaginary cameras.

Yellin, David. "Left Brain, Right Brain, Super Brain: The Holistic Model," *Reading World*, v23 n1 p36-44 Oct 1983.

Argues that, despite nearly three decades of research into cognitive processes that has yielded a great deal of information about how humans learn, little of this research has found its way into

classroom application. Suggests ways that a holistic approach to education can improve student cognitive performance.

Wess, Robert C. "Creativity and Composing: The Composition Teacher as Student," *Teaching English in the Two Year College*, v12 n3 p191-97 Oct 1985.

Proposes that teachers use their own writing as a teaching tool. Discusses both the left-brain logical, rational approach and the right-brain intuitive approach to invention and states that in composing their own methods and materials, instructors can stress both patterns of creativity by illustrating how each complements the other.

Steinley, Gary. "Left Brain/Right Brain: More of the Same?" *Language Arts* v60 n4 p459-62 Apr 1983.

Suggests several activities designed to stimulate both the right and left sides of the brain when students are reading literary texts.

Lewallen, Martha. *An Annotated Bibliography of the Literature Dealing with the Incorporation of Right-Brain Learning into Left-Brain-Oriented Schools.* Exit Project, Indiana University at South Bend, Indiana, 1985. 52 p. [ED 258 722]

Articles and documents concerning brain growth and hemispheric specialization, theories of cognitive style, educational implications of brain research, and right-brain learning activities are cited in this annotated bibliography. Citations are preceded by a glossary of terms and followed by a brief review of the assembled literature. Thirteen classroom techniques for stimulating the right brain are listed and briefly described.

Struve, Nancy. *The Beautiful Brain: A Unit for Grades 5-9 with Further Explorations for Gifted and Talented.* Area Education Agency 7, Cedar Falls, IA., 1982. 62 p. [ED 244 430]

Provides information on the study of the human brain for students in grades 5-9 with suggestions for extending the lessons for gifted and talented students. This document is part of a collection of materials from the Iowa Area Education Agency 7 Teacher Center Project.

Huck, Sharon; Rosenblum, Eileen. "Innovations in ESL Curriculum Design: Kindergarten through Grade 12." Paper presented at the 4th Annual Conference of the Northern Regional Chapter of Illinois Teachers of English as a Second Language/Bilingual Education, 1982. 30 p. [ED 232 466]

A proposed approach to English as a second language (ESL) curriculum design for kindergarten through grade 12 is based on Bloom's taxonomy and McCarthy's four learning styles for right/left-brain learning.

Stahl-Gemake, Josephine; And Others. "The Right Brain: An Active Partner in Written Literacy." Paper presented at the 4th Annual Meeting of the Eastern Regional Conference of the International Reading Association, 1982. 17 p. [ED 228 610]

Describes a graphic configuration called a "web," a visual-spatial network with nodes and emanating lines representing the connections among ideas in our mind, which has been developed to provide reading and writing activities that integrate the processing power of both hemispheres. Webs have been used to help students visualize how new information fits into their existing cognitive framework, to promote prediction of story events, to serve as advanced organizers for disabled readers, and to provide a means to build vocabulary.

Rubin, Janet E. "Back to Basics through Creative Dramatics". [1978] 9 p. [ED 219 769]

Argues for the continued use of creative dramatics in the English classroom because it helps to develop the entire child. The effects of creative dramatics on both left- and right-brain learning proves that it is a sound educational technique.

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